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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,573	10/17/2005	Christian Dussarrat	Serie 6070	1576
40582	7590	06/16/2011		
American Air Liquide, Inc. Intellectual Property Dept. 2700 Post Oak Boulevard Suite 1800 Houston, TX 77056			EXAMINER BURKHART, ELIZABETH A	
			ART UNIT 1715	PAPER NUMBER
			NOTIFICATION DATE 06/16/2011	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### **DETAILED ACTION**

1. Claims 36-43 are pending in the application. Amended claim 36 and canceled claims 44-49 have been noted. The amendment filed 6/6/2011 has been entered and carefully considered.

### ***Response to Arguments***

2. Applicant's arguments filed 6/6/2011 have been fully considered but they are not persuasive. Applicant argues that Buchanan and Sato would not motivate the skilled person to perform a separate synthesis reaction of trisilylamine (TSA) and a hydrazine since Sato expressly suggests using the preliminary chamber for cases where a solid will form as an undesirable reaction product. The examiner disagrees. Sato also discloses that an advantage of using the preliminary chamber is that the precursor formed may be stored such that it can be introduced to the reaction chamber at a desired time [0054]. Thus, it would have been obvious to use the preliminary chamber of Sato even when TSA and hydrazine are used as the feed gases, as suggested by Buchanan, in order to store the gas mixture and introduce such to the reaction chamber at a desired time.

Applicant argues that since Buchanan discloses that the reaction with hydrazine can be conducted *during* deposition of the SiN film, one of ordinary skill would not add an additional processing step where one is not needed, such as reacting TSA with hydrazine *prior* to deposition [0032]. Additionally, Applicant argues that the purpose of the nitridizing species (e.g. hydrazine) in Buchanan is to add nitrogen to the deposited film, not to form a precursor gas comprising silylhydrazine. The Examiner disagrees.

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Buchanan discloses that the layer may be deposited by flowing **one or more gases** into the CVD chamber, wherein the "one or more gases" includes TSA and hydrazine [0017]. Thus, it would have been obvious that TSA is a suitable alternative to the silane compound of Sato for forming a SiN film by CVD, wherein the TSA may also be reacted with the hydrazine in a preliminary chamber to form a precursor as suggested by Sato. Buchanan discloses that TSA is advantageous in that it enables lower temperature formation of SiN [0035].

Applicant argues that Buchanan provides no motivation to react TSA with the nitridizing agent prior to deposition because one of ordinary skill in the art would expect the resulting compound to require higher temperature deposition. The examiner disagrees. While Buchanan discloses that TSA enables lower temperature deposition [0035], this is merely a preferred embodiment. Buchanan does not discourage the use of other silicon-containing precursors since alternatives are disclosed in [0017].

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH BURKHART whose telephone number is (571)272-6647. The examiner can normally be reached on M-Th 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Elizabeth Burkhart/  
Examiner, Art Unit 1715

/Timothy H Meeks/  
Supervisory Patent Examiner, Art Unit 1715